Chemistry Graduate Studies

Professional Science Master’s
Biotechnology Option

Master of Science in Pharmaceutical Chemistry

Department of Chemistry and Environmental Science
College of Science and Liberal Arts
ABOUT THE COLLEGE OF SCIENCE AND LIBERAL ARTS
The College of Science and Liberal Arts (CSLA) is dedicated to instruction in the physical, biological, and mathematical sciences as well as traditional liberal arts disciplines. CSLA is home to internationally renowned research centers and award winning researchers, and partners with departments throughout NJIT to explore emerging frontiers and expand interdisciplinary initiatives in a diverse range of areas that include genomics, neuroscience, ecology, biomechanics, solar physics, photonics, environmental science, applied mathematics and statistics, materials science, technical communication and digital media.

WHY STUDY BIOTECHNOLOGY AT NJIT?
NJIT is uniquely situated among the greatest concentration of biotechnology and pharmaceutical activities in the world, with over 400 private and public biopharmaceutical companies thriving around the NJ Area. Opportunity is right outside our door. The mission of NJIT’s professional Biotechnology option in the MS Pharmaceutical Chemistry program is to prepare scientists and engineers for dynamic careers in biopharmaceutical industry. The program will focus on providing integrated coursework and training in current biotechnology industry practices. Our approach, relying on the input of our industrial advisory board, will ensure that our program will keep students up-to-date on the latest biotechnology industry changes and challenges and prepare them to work in this growing and exciting industry. NJIT’s professional Biotechnology program will provide a solid grounding in science and engineering, with an industry focus, facilitating the tailoring of coursework to meet individual career goals.

PROFESSIONAL SCIENCE MASTER’S
This program option is affiliated with the PSM National Office. The objective of this option is to create leaders with strong communication and management skills in addition to the strong technical knowledge in biotechnology for the rapidly changing biopharmaceutical industry. This option is designed for working professionals or students who already have acquired some professional experience.

CURRICULUM
The Biotechnology option consists of five core courses, three professional courses, one elective course, and one experiential course for a total of 30 credits. For degree requirements consult the graduate catalog: catalog.njit.edu/graduate/.

CORE COURSES (15 CREDIT HOURS)
CHEM 605 Advanced Organic Chemistry I: Structure
CHEM 673 Biochemistry
CHEM 777 Principles of Pharmaceutical Chemistry
BIOL 605 Principles of Bioscience Processing
BIOL 606 Applied Bioprocessing and Immunological Based Therapies

REQUIRED PROFESSIONAL COURSES (9 CREDIT HOURS)
Select three of the following courses:
EM 634 Legal, Ethical & Intellectual Property Issues
HRM 601 Organizational Behavior
MGMT 641 Global Project Management
PTC 601 Adv. Professional & Technical Communication

REQUIRED EXPERIENTIAL COURSE (3 CREDIT HOURS)
CHEM 590 Graduate Co-Op Work Experience

ADMISSIONS REQUIREMENTS
BS degree in the chemical or biological sciences or engineering preferred. GRE for all full-time applicants. Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) for all international students not holding a degree from a U.S. postsecondary institution. Minimum scores: Internet-based TOEFL – 79, computer-based TOEFL – 213, paper-based TOEFL – 550, IELTS – 6.5 with no sub-score lower than 6.0.

ELECTIVE COURSES (3 CREDIT HOURS)
Select one of the following courses:
CHEM 658 Adv. Physical Chemistry
CHEM 661 Instrumental Analysis Laboratory
CHEM 714 Pharmaceutical Analysis
CHEM 716 Integrated Drug Development & Discovery
CHEM 719 Drug Delivery Systems
CHEM 737 Comp. Chemistry & Molecular Modeling
CHEM 748 Nanomaterials
EVSC 616 Toxicology for Engineers & Scientists
MATH 663 Introduction to Biostatistics
PHB 610 Biotechnology: Processes & Products
PHB 615 Bioseparation Processes
PHEN 500 Pharmaceutical Engineering Fundamentals I
PHEN 601 Principals of Pharmaceutical Engineering
PHEN 604 Validation & Reg. Issues in Pharmaceutical I
PHEN 618 Principles of Pharmacokinetics & Drug Delivery
CHEM 700B Master’s Project

Rutgers Newark courses
R120 S72 Concepts in Pharmaceutical Drug Development
R160 S15 Chemical Structure Determination

Rutgers Biomedical and Health Sciences (RBHS) courses
PATH N5209 Business of Science: Drug Development
PHPY N5021 Fundamentals of Pharmacology

FOR FURTHER INFORMATION, CONTACT:
Graduate Programs,
Department of Chemistry and Environmental Science
chemistry.njit.edu
gradchem@njit.edu

TO APPLY CONTACT:
Office of Graduate Admissions
973-596-3300, or apply on-line at
http://www.njit.edu/admissions/apply-online.php

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